REMARKS

Claim 13 has been added.

Claims 3-4, 6-7 and 10 have been amended to eliminate multiple dependencies.

The substitution of claims 1-3 has been done to merely place this national phase application in into the same condition as it was during Chapter II of the International Phase.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly requested.

Should there be any matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Attached hereto is a marked-up version of the changes made to the claims and abstract by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE."

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

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BC/bam
Attachments

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE ABSTRACT OF THE DISCLOSURE:

The Abstract of the Disclosure has been amended as follows:

METHOD AND DEVICE FOR CONTINUOUS TREATMENT OF COPPER SULPHIDE CONTAINING ORE BY BIOLOGICAL LEACHING

ABSTRACT

~~The invention concerns a~~A method and a device for treating copper sulphide containing ore, ~~comprising~~includes a step of biological leaching whereby the minerals are subjected in reactors (1) in cascade arrangement, wherein the temperature is maintained between 75°C and 85°C to the action of a bacterial culture, which ~~comprises~~includes a thermophilic bacterium of the Sulfolobus type, leading to solution heat treating of the copper. The method is characterized in that, during ~~said~~the biological leaching step, the treatment is uninterrupted, the medium containing the bacterial culture being continuously mechanically agitated to ensure oxygenation thereof, and suspension of the solid elements, and the solid mass proportion of the culture medium is maintained above 10%.

~~Translator's Note: The following legend appears in the single Figure:~~

~~FIRST STEP BIOLOGICAL LEACHING~~

~~SECOND STEP PRECIPITATING IRON~~
~~ELIMINATING IRON IN SOLUTION AND FILTERING~~
~~EXTRACTION~~

~~THIRD STEP ELECTROLYSIS~~

IN THE CLAIMS:

The claims have been amended as follows:

3. (Amended) Method according to ~~one of the preceding Claims,~~ Claim 1, characterized in that the bacterial culture used was previously subjected to an adaptation, by successive transplants on a substrate, particularly of chalcopyrite, by progressively and artificially increasing the concentrations of the copper in solution, in order to render it able to develop in media of which the mass concentrations of copper are of the order of 50 g/l.

4. (Amended) Method according to ~~one of the preceding Claims,~~ Claim 1, characterized in that a pH included between 1.2 and 1.6 is maintained in the biological leaching reactors (1).

6. (Amended) Method according to ~~one of the preceding Claims,~~ Claim 1, characterized in that all along the phase of biological leaching, the physiological state of the bacterial culture is monitored with the aid of means for on-line analysis of the gases emerging from the reactors.

7. (Amended) Method according to ~~one of the preceding Claims,~~ Claim 1, characterized in that the step of biological leaching is followed by a second step during which, in a first phase:

- the pulp issuing from the biological leaching reactors (1) is admitted in precipitation reactors (5) in which the iron is eliminated by provoking a precipitation of jarosite, by addition of calcite, and the solution is maintained at a pH less than 3,
- the neutralized pulp is admitted in a decanter (7) and a part of the solids is made to recirculate at the head of the precipitation reactors (5).

10. (Amended) Method according to ~~one of Claims 7 to 9,~~ Claim 7, characterized in that the outlet (19) of the extraction unit (17) is placed in communication with the inlet (4) of the precipitation reactors (5), so as to cause part of the raffinate collected at this outlet (19) to be recirculated by causing it to traverse said reactors (5) again with a high flowrate (Q2) with respect to the flowrate (Q1) of the pulp coming from the biological leaching reactors (1), so as to provoke a dilution of the aqueous solution subjected to extraction, up to a concentration of copper of the order of about 10 g/l, i.e. up to a value corresponding to the possible extraction of the copper in an extraction unit (17).